

REMARKS

Claims 1-17 are currently pending in connection with the present application. Claims 1, 12 and 15 are independent claims. Reconsideration and allowance are respectfully requested in view of the following remarks.

Applicants acknowledge and thank the Examiner for indicating that claim 17 contains allowable subject matter and would be allowed if rewritten in independent form including all the limitations of the base claim and any intervening claims.

PRIOR ART REJECTIONS

35 U.S.C. §103(a) Bai/Cady Rejection

Claims 1-4, 7 and 9-16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bai et al. (U.S. Patent No. 6,326,700) in view of Cady et al. (U.S. Patent No. 6,576,992). Applicant respectfully traverses this rejection.

Initially, Applicants note that the Examiner has maintained the same references in rejecting the present claims. However, the Examiner is reinterpreting Bai et al. to reject the present claim. Again for brevity, the patentability of independent claims will be collectively discussed with respect to claim 1 in this section.

The Examiner now alleges that Bai et al. teaches a connecting pad 211a and terminal pad 211b. Claim 1 recites, *inter alia*:

a substrate having a first face and a second face opposing the first face, a plurality of terminal pads and a plurality of connecting pads formed on the second face; and

...the substrate further including first wirings connected to the terminal pad and providing electrical paths coupling the semiconductor chip and the terminal pads and second wirings connected to the terminal pad and providing electrical paths coupling the semiconductor chip and the connecting pads (Emphasis added.)

For explanation purposes only, Applicants refer the Examiner to FIGS. 5a and 5b of the present application. As can be seen in FIG. 5a, for example, a substrate may include a first wiring 313a providing an electrical path between a terminal pad 314a and a semiconductor chip; also, a second wiring 312a may be connected to the terminal pad 314a, and the second wiring 312a may provide an electrical path between the semiconductor chip and a connecting pad 311a.

Even assuming that Bai et al. teaches a connecting pad 211a and terminal pad 211b, Bai et al. also specifically teaches:

At the terminal end of each conductive traces 211 a ball pad 211a is formed for the solder ball 24 to implant thereon, while a bond pad 211b is formed at the initial end of a gold wire 22 to bond thereon. Column 4, line 65 to column 5, line 1. (Emphasis added.)

The next step is to form a second resin body over the conductive traces 211 of the substrate 21 after the solder balls 24 are bonded to the ball pads 211a of the conductive traces 211, allowing the conductive traces 211 to be completely encapsulated and the solder balls 24 to be partly cover by the second resin body. Column 5, lines 50-55.

With reference to FIG. 1 and the above remarks, it is clear that Bai et al. fails to suggest or teach that “the substrate further includ[es] first wirings connected to the terminal pad and providing electrical paths coupling the semiconductor chip and the terminal pads and second wirings connected to the terminal pad and providing electrical paths coupling the semiconductor chip and the connecting pads” as recited in claim 1. (Emphasis added.) More specifically, even if the solder ball 24 is the second wiring, Bai et al. specifically teaches that the solder balls are used to allow a testing tool to contact thereon during a testing process. Column 6, lines 3-6. Therefore, Bai et al. fails to teach “...second wirings connected to the terminal pad and providing electrical paths coupling the semiconductor chip and the connecting pads” recited in claim 1.

For at least the reasons given above, Applicants submit that independent claims 1, 12 and 15 are patentable over the combination of Bai et al. and Cady et al., because Cady et al. fails to cure the deficiency of Bai et al. In addition, dependent claims 2, 3, 7, 9-11, 13, 14 and 16 are also patentable for respectively depending on allowable an allowable base claim.

35 U.S.C. §103 Bai/Cady/Taniguchi Rejection

Claims 5 and 6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bai et al. in view of Cady et al. in further view of Taniguchi et al. (U.S. Patent 6,388,333). Applicants respectfully traverse this rejection.

As remarked above, Bai et al. and Cady et al. neither individually nor in combination teach all the features of claim 1. In addition, the Examiner alleges that Taniguchi et al. teaches a second wiring. Applicants disagree.

Figure 6 of Taniguchi et al. only shows wire 6 attached to bonding pad 5. Column 8, lines 21-24. In other words, at best Taniguchi et al. teaches first wirings. Therefore, even if the teachings of Bai et al., Cady et al. and Taniguchi et al. can be combined, the combination would still fail to teach each and every feature of claim 1.

For at least the reasons given above, claim 1 is patentable over a combination of Bai et al., Cady et al. and Taniguchi et al. Dependent claims 5 and 6 are also patentable for depending in an allowable base claim.

35 U.S.C. §103 Bai/Cady/Takashima Rejection

Claim 8 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Bai et al. in view of Cady et al. in further view of Takashima et al. (U.S. Patent 6,160,313). Applicants respectfully traverse this rejection.

As remarked above, a combination of Bai et al. and Cady et al. fail to teach each and every feature of claim 1. In addition, Takashima et al. fails to cure the deficiencies of Bai et al. and Cady et al. Accordingly, claim 8 is patentable for depending on an allowable base claim.

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CONCLUSION

Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of each of claims 1-17 in connection with the present application is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John A. Castellano at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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By

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